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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,267	12/12/2003	Masahiko Suzuki	HITA.0470	8685
38327	7590	06/14/2005	EXAMINER	
REED SMITH LLP			SCHECHTER, ANDREW M	
3110 FAIRVIEW PARK DRIVE, SUITE 1400			ART UNIT	
FALLS CHURCH, VA 22042			PAPER NUMBER	

2871

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/733,267

**Applicant(s)**

SUZUKI ET AL.

**Examiner**

Andrew Schechter

**Art Unit**

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 14 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12 and 13 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/12/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Display device having metal heat diffusion member".

### ***Claim Objections***

2. Claims 1 and 9 are objected to because of the following informalities: "which form an electric field between the pixel electrode" should be "which form an electric field between the common electrode and the pixel electrode". Appropriate correction is required.
3. Claim 4 is objected to because of the following informalities: "formed in the heat diffusion member" should be "formed in an insulating layer on the heat diffusion member". Appropriate correction is required.
4. Claim 10 is objected to because of the following informalities: "the electrode" should be "the pixel electrode". Appropriate correction is required.
5. Claim 12 is objected to because of the following informalities: "the thin film transistor" should be "a thin film transistor". Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 3-6 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 does not make sense. For examining purposes, it is assumed that it means to recite "wherein the pixel electrode and the heat diffusion member are superposed over each other at the projecting portion".

Claims 4-6 depend from claim 3.

8. Claims 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites "a metal heat diffusion member which is superposed on a lower layer of a transparent electrode by way of an insulation film", which is unclear. In the device, transparent electrode does not have "a lower layer". The heat diffusion member has an insulation film on it, which has a transparent electrode on it. For examining purposes, this is assumed to recite "a metal heat diffusion member which is superposed with a transparent electrode, there being an insulation film between them".

Claim 13 depends on claim 12.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-3, 6-8, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by *Kitajima et al.*, U.S. Patent No. 6,331,845.

*Kitajima* discloses [see Fig. 17, for instance] a display device including a metal heat diffusion member [106, 310, col. 15, lines 41-43] which is superposed on a lower layer of a transparent electrode [54, col. 15, line 45-48] by way of an insulation film [col. 15, lines 51-55], the heat diffusion member has a projecting portion [top part of 310, extending higher than 106] at a portion thereof remoter than a distance between the heat diffusion member and the thin film transistor [102, etc.], and the heat diffusion member is superposed on the transparent electrode at the projecting portion. Claim 12 is therefore anticipated.

*Kitajima* also discloses a liquid crystal display device comprising TFTs [102, etc.], scanning signal lines [101], data signal lines [100] arranged as recited, pixel electrodes [54] electrically connected to an output electrode [102B] of one of the TFTs, and a common electrode [63, see Fig. 5B, for instance] which forms an electric field between

the common electrode and the pixel electrode, a pixel region surrounded by the neighboring two of the scanning and data lines, a metal heat diffusion member [106, 310] being spaced apart from the TFT, the heat diffusion member has a projecting portion which is remoter than a distance between the TFT and the heat diffusion member [as above], the projecting portion superposed with the transparent electrode, and the transparent electrode being one of the pixel electrode and the common electrode [either, in this case]. Claim 1 is therefore anticipated.

*Kitajima* discloses that a width of the projecting portion is equal to or wider than a width of the pixel electrode at a portion which superposes the projecting portion [see Fig. 17], so claim 2 is also anticipated. The pixel electrode and heat diffusion member are superposed at the projecting portion, so claim 3 is also anticipated. The heat diffusion member is a common signal line, so claim 6 is also anticipated. The common electrode is formed of a transparent electrode and superposed with the heat diffusion member at the projecting portion, so claim 7 is also anticipated. The heat diffusion member is the common signal line, so claim 8 is also anticipated.

11. Claims 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by *Kubo et al.*, U.S. Patent No. 6,195,140.

*Kubo* discloses [see Figs. 37 and 38, for instance] a liquid crystal display device comprising TFTs, scanning and data lines, a pixel electrode [246] is connected to an output electrode [243] of a TFT, and a common electrode [on the opposing substrate] which forms an electric field between the common electrode and the pixel electrode, and a pixel region surrounded by neighboring two of the scanning and data lines,

wherein a metal heat diffusion member [242] is disposed in a spaced apart manner from the TFT and is arranged in an isolated manner [see the figures], and formed a superposed portion together with one of the pixel electrode and the common electrode [both]. Claim 9 is therefore anticipated.

The pixel electrode and the common electrode are transparent, so claim 10 is also anticipated.

12. Claims 1-5, 7, and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by *Matsumoto et al.*, U.S. Patent No. 6,862,067.

*Matsumoto* discloses [see Figs. 1-6] a liquid crystal display device comprising TFTs, scanning and data signal lines, a pixel electrode [27] electrically connected to the output electrode [30b] of the TFT, and a common electrode [26] which forms an electric field between the common electrode and the pixel electrode, a pixel region surrounded by neighboring two scanning and data line, wherein a metal heat diffusion member [42a, the top of the electrode whose bottom part is the source electrode 30b] is disposed in a spaced apart manner from the TFT, the heat diffusion member has a projecting portion [any of the three jagged projections] remoter than a distance between the TFT and the heat diffusion member, and the projecting portion superposes with a transparent electrode being one of the pixel electrode and the common electrode [either, depending on the projection]. Claim 1 is therefore anticipated.

A width of the projecting portion is equal to or wider than a width of the pixel electrode or common electrode at a superposed portion of the projecting portion, so claim 2 is also anticipated. The pixel electrode superposes the heat diffusion member,

so claim 3 is also anticipated. The heat diffusion member is formed on the same layer as the output electrode of the TFT and is connected to the pixel electrode via a through hole [39b], so claim 4 is also anticipated. The heat diffusion member is superposed on the common signal line [26a] and the heat diffusion member projects from the common signal line, so claim 5 is also anticipated. The heat diffusion member superposes the transparent common electrode at the projecting portion, so claim 7 is also anticipated. There is an insulation film between the heat diffusion member and the transparent electrode, so claim 12 is also anticipated.

***Allowable Subject Matter***

13. Claims 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Claim 13 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter:

Claims 11 and 13 recite the limitation that there is an inorganic insulation film and an organic insulation film between the heat diffusion member and the superposed electrode, with the organic insulation film having a removed portion at the superposed



portion. This is not disclosed by the prior art, so claims 11 and 13 would be allowable if appropriately rewritten.

***Election/Restrictions***

16. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-13, drawn to a display device, classified in class 349, subclass 141.
- II. Claim 14 and 15, drawn to method of making a display device, classified in class 349, subclass 187.

The inventions are distinct, each from the other because of the following reasons:

17. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the device can be made without the step of cutting to repair a short-circuit, recited in claim 14.

18. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

19. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).
20. Applicant's election without traverse of Group I, claims 1-13, in the reply filed on 19 May 2005 is acknowledged.

### ***Conclusion***

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,680,772 to *Lee* also discloses [see Fig. 7] an LCD having a transparent electrode overlap a metal electrode with a projection portion away from a TFT.


U.S. Patent No. 6,710,836 to *Lee* discloses [see Fig. 10] a transparent electrode overlapping a metal electrode with projections, but the projections point towards the TFT.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (571) 272-2302. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Andrew Schechter  
Primary Examiner  
Technology Center 2800  
10 June 2005